



US Army Corps  
Of Engineers  
Wilmington District

# PUBLIC NOTICE

Issue Date: February 15, 2008  
Comment Deadline: March 17, 2008  
Corps Action ID #: SAW-2002-20667

The Wilmington District, Corps of Engineers (Corps) has received information from the North Carolina Department of Transportation (NCDOT), regarding a potential future requirement for Department of the Army authorization to impact streams and wetlands in the Mill Creek, MoAdams Creek and Back Creek basins, associated with the proposed relocation of NC 119 between the existing I-85/40 interchange (Exit 153), south of Mebane and SR 1918 (Mrs. White Lane) north of Mebane, Alamance County, North Carolina.

Specific alternative alignments and location information are described below and shown on the attached plans and charts. This Public Notice and all attached plans are also available on the Wilmington District Web Site at [www.saw.usace.army.mil/wetlands](http://www.saw.usace.army.mil/wetlands)

**Applicant:**

North Carolina Department of Transportation  
Attn: Gregory J. Thorpe, Ph.D.  
Environmental Management Director, PDEA  
1548 Mail Service Center  
Raleigh, NC 27699-1548

**Authority**

The Corps will evaluate this application to compare alternatives that have been carried forward for study, pursuant to applicable procedures of Section 404(b)(1) of the Clean Water Act (33U.S.C. 1344).

**Background**

A NCDOT/Federal Highway Administration (FHWA) Draft Environmental Impact Statement and Draft Section 4(F) Evaluation were completed for the NC 119 project in early August, 2007. The social, economic, and environmental impacts associated with the reasonable and feasible build alternatives for this project have been evaluated and are described within the Draft Environmental Impact Statement.

NCDOT/FHWA has identified three (3) build alternatives for detailed study in the Draft Environmental Impact Statement for NC 119 between I-85/40 and SR1918. The Corps of Engineers is reviewing all three alternatives as described below and shown on the attached maps and charts.

**Location**

Between I-85/40 and SR1918, west of Mebane, Alamance County, North Carolina (center of study at ~ 36.0983° N and 79.2952° W)

**Existing Site Conditions**

The general area that would likely be impacted varies and includes semi-rural, industrial and commercial development to the south and along the I-85/40 corridor, with suburban residential and supporting commercial development occurring throughout much of the project study area. The areas north and west of Mebane are primarily semi-rural with low-density single-family residences and agricultural uses and open space. The study area is primarily in the Mill Creek, MoAdams Creek and Back Creek, Haw River basin.

The wetland habitats that would be impacted by the proposed project are freshwater marsh and headwater forested type wetlands. The wetlands are jurisdictional features draining to tributaries of the streams stated above. One isolated wetland is proposed for minor impact. A description of the streams and wetlands proposed for impact under each alternative is provided within the attached documents.

**Applicant's Stated Purpose**

The project purpose is to reduce traffic congestion in downtown Mebane, improve access to the local area and provide Alamance County a primary north-south route.

**Project Description**

Maps showing the location of the project study area and the three alternatives are included with this public notice.

The proposed relocation build alternatives share common northern and southern termini originating at existing Interstate 85/40. The proposed project extend northward diverging into three alternatives just north of US 70 and converge with NC 119 just south of SR 1918 (Mrs.White Lane).

The impacts of the alternatives that are being reviewed are described in the attached tables. Wetland and streams have been delineated in the field and were verified by the Corps of Engineers on February 16, 2005.

In order to more fully integrate Section 404 permit requirements with the National Environmental Policy Act of 1969, and to give careful consideration to our required public interest review and 404(b)(1) compliance determination, the Corps of Engineers is soliciting public comment on the merits of the proposal, and on the three improvement alternatives discussed above. At the close of this comment period, the District Commander will evaluate and consider the comments received as well as the expected adverse and beneficial impacts of the proposed roadway improvements to select the least

environmentally damaging, practicable alternative (LEDPA). The District Commander is not authorizing construction of the NC 119 improvements at this time. A final Department of the Army permit could be issued, if at all, only after our review process is complete, impacts to the aquatic environment have been minimized to the maximum extent practicable, and a compensatory mitigation plan has been approved.

Please note that NC DOT held a Public Hearing on January 15, 2008, at the Mebane Arts and Community Center, 633 Corrigidor Road, in Mebane, North Carolina.

### **Other Required Authorizations**

This notice and all applicable application materials are being forwarded to the appropriate State agencies for review. The Corps will generally not make a final permit decision until the North Carolina Division of Water Quality (NCDWQ) issues, denies, or waives State certification required by Section 401 of the Clean Water Act (PL 92-500). Additional information regarding the Clean Water Act certification may be reviewed at the NCDWQ Central Office, 401 Oversight and Express Permits Unit, 2321 Crabtree Boulevard, Raleigh, North Carolina 27604-2260. All persons desiring to make comments regarding the application for certification under Section 401 of the Clean Water Act should do so in writing delivered to the North Carolina Division of Water Quality (NCDWQ), 1650 Mail Service Center, Raleigh, North Carolina 27699-1650 Attention: Mr. Brian Wrenn by March 7, 2008.

### **Essential Fish Habitat**

This notice initiates the Essential Fish Habitat (EFH) consultation requirements of the Magnuson-Stevens Fishery Conservation and Management Act. The Corps' initial determination is that the proposed project will not adversely impact EFH or associated fisheries managed by the South Atlantic or Mid Atlantic Fishery Management Councils or the National Marine Fisheries Service.

### **Cultural Resources**

The Corps has consulted the latest published version of the National Register of Historic Places and is aware that four properties, the Paisley-Cates Farm, Cook's Mill, the Dr. W.N. Tate Farm and House "K", are listed on or eligible for inclusion therein and are located near the proposed project. The Corps will consult with the State Historic Preservation Office regarding potential adverse affects, if any, to this property prior to permit issuance. Presently, other unknown archeological, scientific, prehistoric, or historical data may be located within the project area and/or could be affected by the proposed work.

## **Endangered Species**

The Corps has reviewed the project area, examined all information provided by the applicant and consulted the latest North Carolina Natural Heritage Database. Based on available information, the Corps is not aware of the presence of species listed as threatened or endangered or their critical habitat formally designated pursuant to the Endangered Species Act of 1973 within the project area. A final determination on the effects of the proposed project will be made upon additional review of the project and completion of any necessary biological assessment and/or consultation with the U.S. Fish and Wildlife Service and/or National Marine Fisheries Service.

## **Evaluation**

The decision whether to issue a permit will be based on an evaluation of the probable impacts, including cumulative impacts, of the proposed activity on the public interest. That decision will reflect the national concern for both protection and utilization of important resources. The benefit which reasonably may be expected to accrue from the proposal must be balanced against its reasonably foreseeable detriments. All factors which may be relevant to the proposal will be considered including the cumulative effects thereof; among those are conservation, economics, aesthetics, general environmental concerns, wetlands, historic properties, fish and wildlife values, flood hazards, flood plain values (in accordance with Executive Order 11988), land use, navigation, shoreline erosion and accretion, recreation, water supply and conservation, water quality, energy needs, safety, food and fiber production, mineral needs, considerations of property ownership, and, in general, the needs and welfare of the people. For activities involving the discharge of dredged or fill materials in waters of the United States, the evaluation of the impact of the activity on the public interest will include application of the Environmental Protection Agency's 404(b)(1) guidelines.

## **Commenting Information**

The Corps of Engineers is soliciting comments from the public; Federal, State and local agencies and officials, including any consolidate State Viewpoint or written position of the Governor; Indian Tribes and other interested parties in order to consider and evaluate the impacts of this proposed activity. Any comments received will be considered by the Corps of Engineers to determine whether to issue, modify, condition or deny a permit for this proposal. To make this decision, comments are used to assess impacts on endangered species, historic properties, water quality, general environmental effects and the other public interest factors listed above. Comments are used in the preparation of an Environmental Assessment (EA) and/or an Environmental Impact Statement (EIS) pursuant to the National Environmental Policy Act (NEPA). Comments are also used to determine the need for a public hearing and to determine the overall public interest of the proposed activity.

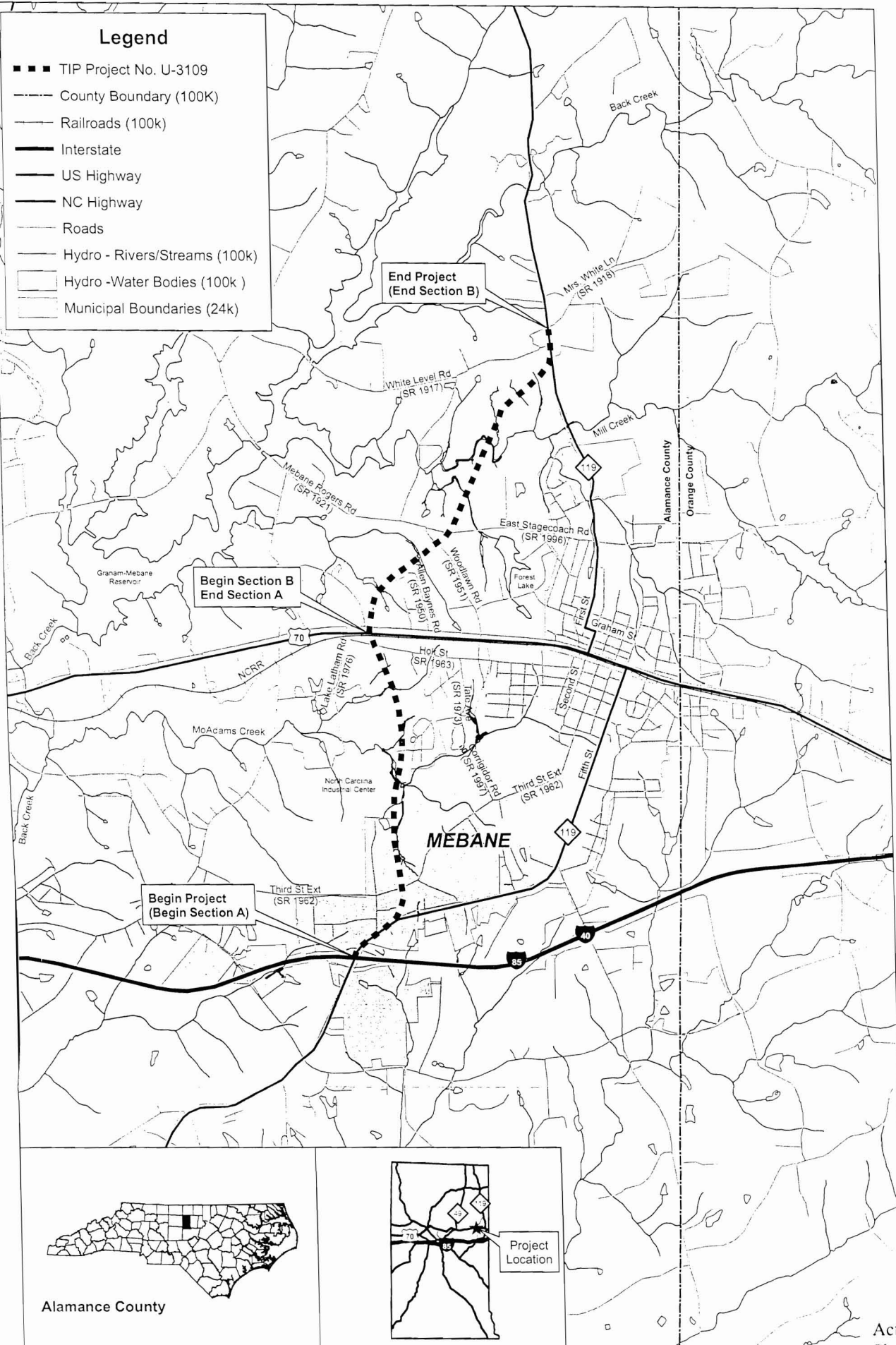
Any person may request, in writing, within the comment period specified in this notice, that a public hearing be held to consider the application. Requests for public hearings shall state, with particularity, the reasons for holding a public hearing. Requests for a public hearing shall be granted, unless the District Engineer determines that the issues raised are insubstantial or there is otherwise no valid interest to be served by a hearing.

As stated above, a NC DOT Public Hearing was held on January 15, 2008, at the Mebane Arts and Community Center, 633 Corrigidor Road, in Mebane, North Carolina.

Written comments pertinent to the proposed work, as outlined above, will be received by the Corps of Engineers, Wilmington District, until 5pm, March 17, 2008. Comments should be submitted to Andrew Williams, Raleigh Regulatory Field Office, 3331 Heritage Trade Drive, Suite 105, Wake Forest, North Carolina 27587.

# Legend

- ■ ■ TIP Project No. U-3109
- County Boundary (100K)
- Railroads (100k)
- Interstate
- US Highway
- NC Highway
- Roads
- Hydro - Rivers/Streams (100k)
- Hydro -Water Bodies (100k )
- Municipal Boundaries (24k)



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Alamance County





North Carolina Department of Transportation  
Project Development & Environmental Analysis Branch  
Proposed Relocation of NC 119 from I-85/40 to South of SR 1918  
Mebane, Alamance County  
TIP Project No. U-3109

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





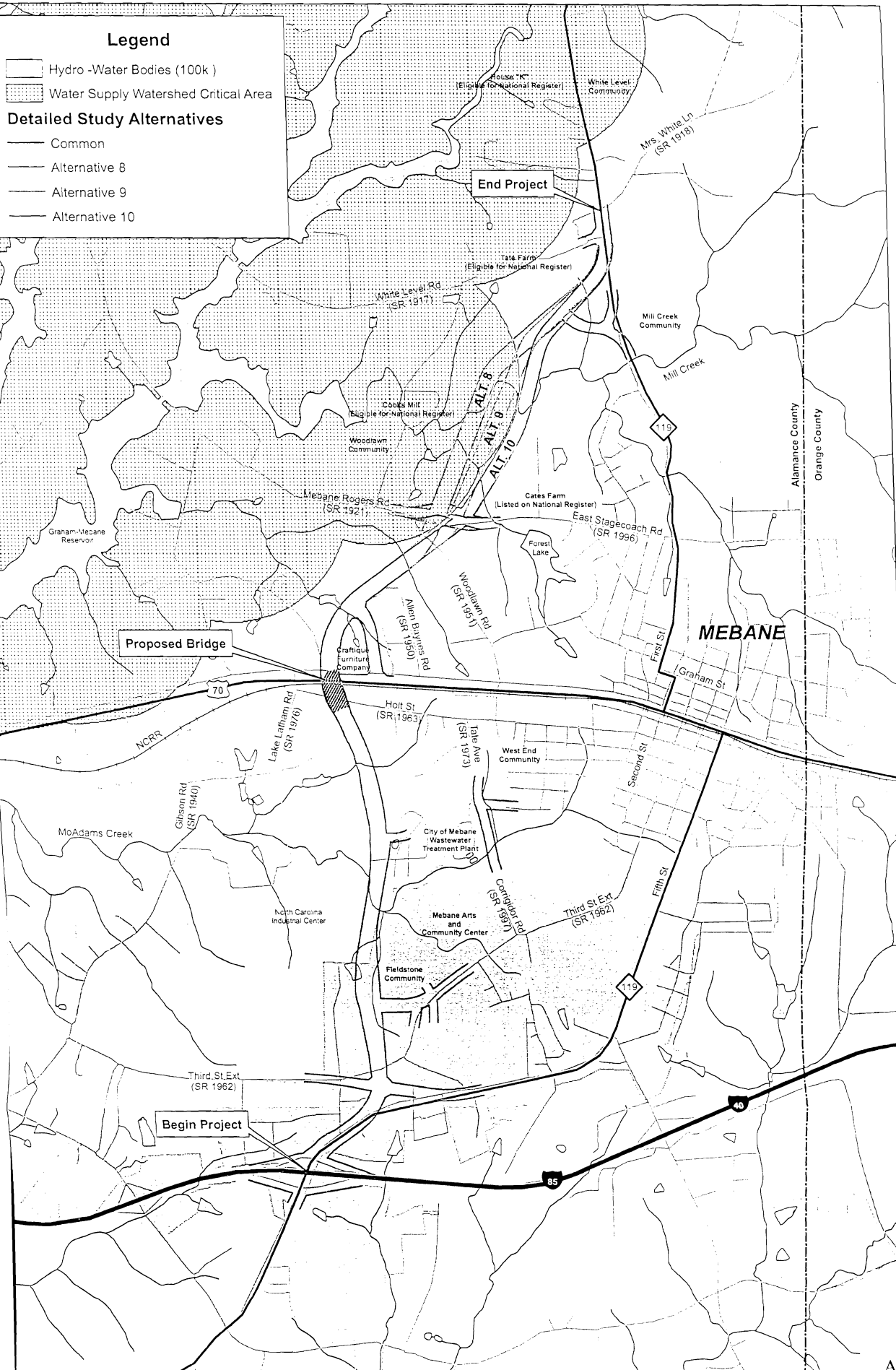
**Figure S.1**  
Project Vicinit

## Legend

-  Hydro -Water Bodies (100k )
-  Water Supply Watershed Critical Area

## Detailed Study Alternatives

-  Common
-  Alternative 8
-  Alternative 9
-  Alternative 10



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North Carolina Department of Transportation  
Project Development & Environmental Analysis Branch  
Proposed Relocation of NC 119 from I-85/40 to South of SR 1918  
Mebane, Alamance County  
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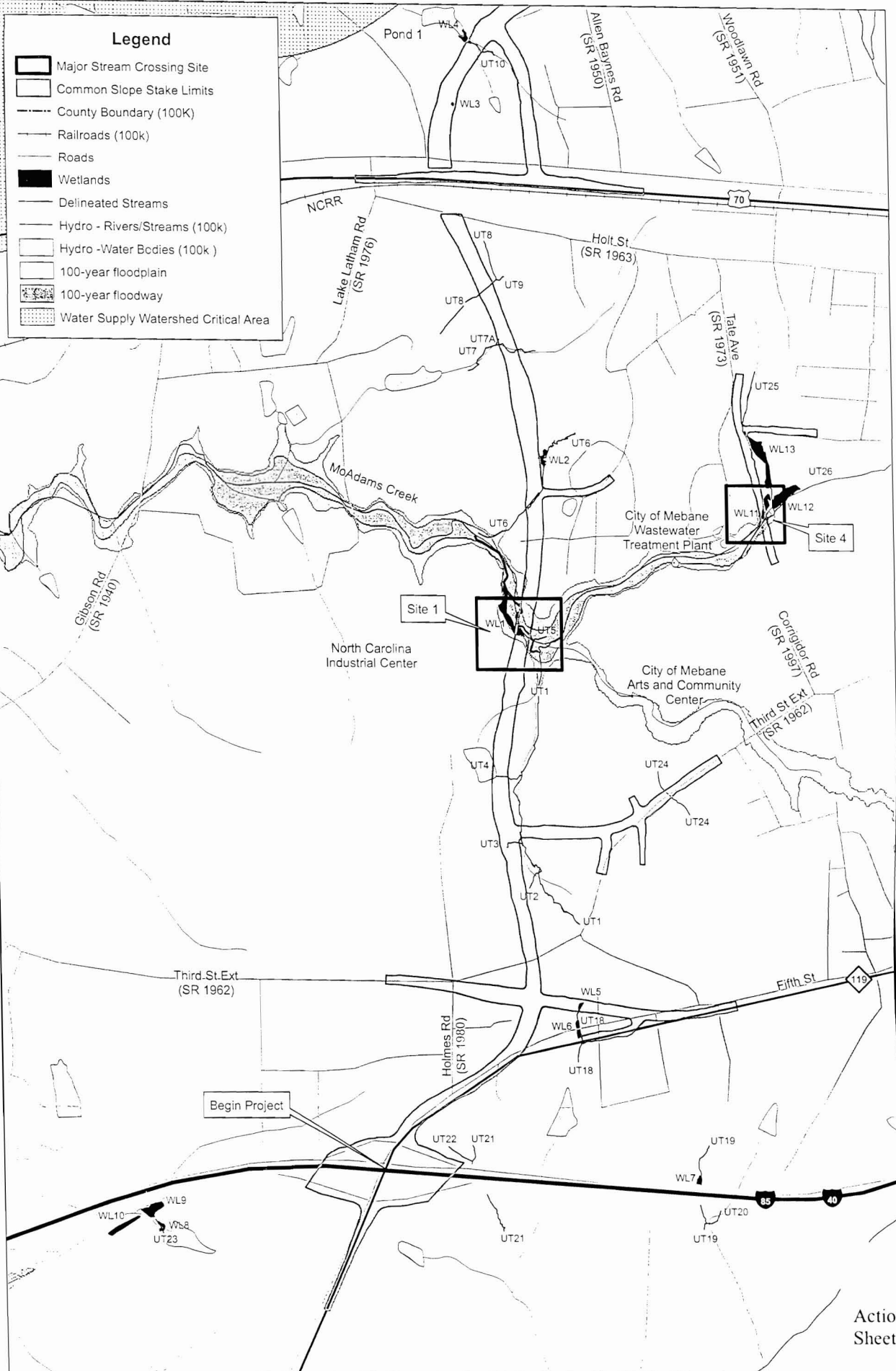
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**Figure S**  
Detailed  
Study Alternatives

# Legend

- Major Stream Crossing Site
- Common Slope Stake Limits
- County Boundary (100K)
- Railroads (100k)
- Roads
- Wetlands
- Delineated Streams
- Hydro - Rivers/Streams (100k)
- Hydro -Water Bodies (100k )
- 100-year floodplain
- 100-year floodway
- Water Supply Watershed Critical Area



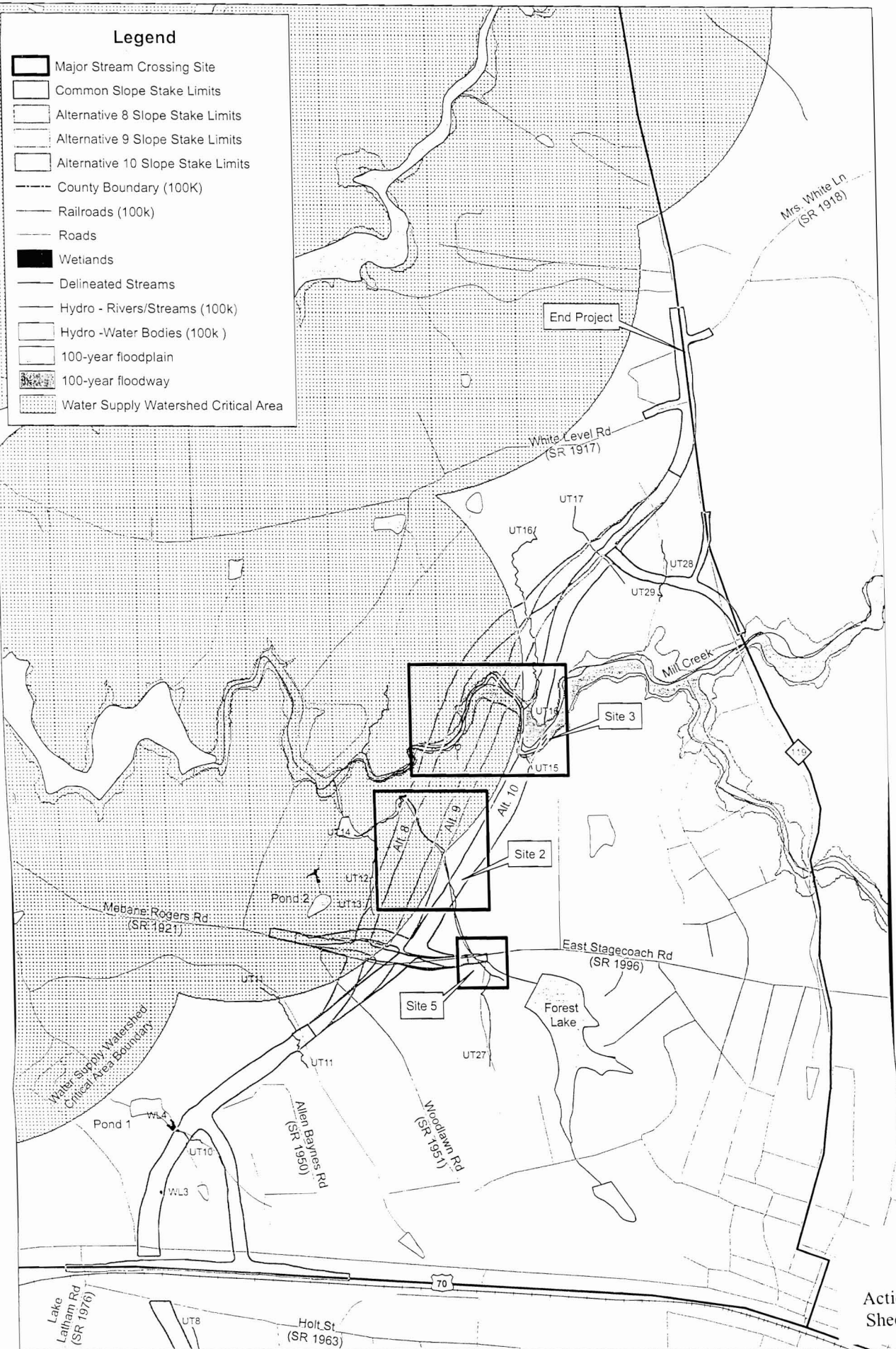
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# Legend

- Major Stream Crossing Site
- Common Slope Stake Limits
- Alternative 8 Slope Stake Limits
- Alternative 9 Slope Stake Limits
- Alternative 10 Slope Stake Limits
- County Boundary (100K)
- Railroads (100k)
- Roads
- Wetlands
- Delineated Streams
- Hydro - Rivers/Streams (100k)
- Hydro -Water Bodies (100k )
- 100-year floodplain
- 100-year floodway
- Water Supply Watershed Critical Area



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North Carolina Department of Transportation  
Project Development & Environmental Analysis Branch  
Proposed Relocation of NC 119 from I-85/40 to South of SR 1918  
Mebane, Alamance County  
TIP Project No. U-3109

0 500 1,000 2,000  
Feet



**Figure S.3**  
**Water Resource**  
**Impacts**

Sheet 2 of 2

## S.5 SUMMARY OF IMPACTS FOR DETAILED STUDY ALTERNATIVES

The following is a narrative summary of the primary environmental consequences associated with each of the Detailed Study Alternatives. Table S.2 provides a summary of environmental impacts associated with this project.

**Table S.2**  
**Summary of Environmental Impacts**

Issue	Detailed Study Alternative		
	8	9	10
<b><i>PROJECT FACTORS</i></b>			
Mainline Length (miles)*	5.6	5.6	5.6
Construction Cost (millions \$)	73,900,000	73,400,000	75,400,000
Utility Relocation Cost (millions \$)	2,402,000	2,402,000	2,402,000
Right-of-Way Cost (millions \$)	30,475,000	30,550,000	29,947,500
<b>TOTAL COST</b> (millions \$)	106,777,000	106,352,000	107,749,500
<b><i>SOCIOECONOMIC FACTORS</i></b>			
Residential Relocations	44	46	46
Business Relocations	5	5	5
Parks Impacted	0	0	0
Schools Impacted	0	0	0
Churches Displaced	1	1	1
Cemeteries Impacted	0	0	0
Noise Impacts (# receptors approaching or exceeding criteria)	12	11	12
Noise Impacts (# receptors with substantial noise level increase)	4	3	4
<b><i>INFRASTRUCTURE</i></b>			
Major Electric Power Transmission Line Crossings	2	2	2
Water and Sewer Facility Impacts (Water Tower)	1	1	1
Fiber Optic Cable Crossings	1	1	1
<b><i>CULTURAL RESOURCE FACTORS</i></b>			
Historic Sites with Adverse Effect	0	1	1
Impacted Section 4(f)/6(f) Resources	0	1	1
<b><i>NATURAL RESOURCE FACTORS</i></b>			
Federally Listed T&E Species Impacted	0	0	0
Perennial Stream Crossings	19	17	18
Impacts to Streams (linear feet)	3,642	3,441	3,904

Issue	Detailed Study Alternative		
	8	9	10
Wetlands (acres)	0.249	0.249	0.249
Length in water supply critical area (miles)**	1.0	0.7	0
Length in water supply protected area (miles)**	1.7	1.7	2.5
<b>Estimated Impacts to Terrestrial Communities</b>			
Oak-Hickory Forest (acres)	67.6	59.8	60.9
Secondary Pine Forest (acres)	2.8	2.8	2.8
Maintained / Disturbed (acres)	110.5	116.9	117.8
<b>TOTAL COMMUNITY IMPACTS (acres)</b>	180.9	179.5	181.5
<b>PHYSICAL FACTORS</b>			
Floodplains (acres)	2.51	3.15	4.12
Floodplains (linear feet of crossing)	1,052	1,029	1,215
Floodway (linear feet of crossing)	429	519	691
Prime and Unique Farmland (acres)	153.18	153.48	149.78
Hazardous Materials Sites Within Corridor	2	2	2
Ambient Air Quality CO Standards Exceedances (#)	0	0	0

Notes: Estimate of impacts based on construction limits (slope stakes), unless otherwise noted.

\* Mainline lengths are approximate.

\*\* Water supply critical area and water supply protected area lengths are approximate.

## S.5.1 Socioeconomic Impacts

### S.5.1.1 Land Use and Transportation Planning

The NC 119 Relocation project is consistent with state and local transportation plans for the project area.

### S.5.1.2 Public Services and Facilities

The proposed project would require the relocation of St. Luke's Christian Church, located within the West End community. This church serves residents of the West End community. This right-of-way acquisition would be considered an impact to the West End community if a suitable relocation site is not available in the area. However, there appears to be vacant suitable land near the church, so it is anticipated that the church will be able to relocate within the West End community. Additionally, church representatives have stated a preference for relocation versus loss of a portion of their property. In August 2000, NCDOT met with representatives from the church to discuss the NC 119 relocation project (Appendix H). After reviewing the plans, the church stated they preferred to be relocated because the project would hamper plans for expansion of the church. In a subsequent meeting with NCDOT in January 2001, church representatives reiterated they would prefer to be relocated if the project is constructed. Their preference was to build a new church building on 2.5 acres opposite the existing church parking lot on the east side of SR 1982 (St. Luke's Church Road). The NCDOT will continue to coordinate with the church throughout the project and work

North Carolina's water supply regulations (15A NCAC 02B .0104(m)) require that "to the extent practicable, the construction of new roads in the critical area shall be avoided." The regulations also require that the construction of new roads within water supply watersheds minimize built-upon area, divert stormwater away from surface water supply waters as much as possible, and employ BMPs to minimize water quality impacts.

"Practicable" alternatives to construction of road projects in water supply critical areas were among the issues considered in *McKeel and Getchell v. NCDWQ and NCDOT*, 00 EHR 1225. One of the plaintiffs' allegations was that NCDWQ, in issuing a water quality permit to NCDOT, exceeded its authority, acted erroneously, failed to use proper procedure, acted arbitrarily and capriciously, or failed to act as required by law or rule in determining "that there were not practical alternatives to construction of the project in order to avoid impacting a portion of the critical area of the water supply." Although an administrative law judge recommended that the NC Environmental Management Commission (EMC) find in favor of the plaintiffs, the EMC reviewed the process used by NCDWQ and NCDOT and upheld the issuance of the permit.

### 3.2.7.2 Drainage Basins, Streams, and Ponds

The project study area is located within the upper Cape Fear River Basin, NCDWQ subbasin 030602 (United States Geological Survey [USGS] 8-digit Hydrological Unit Code 03030002). The southernmost section of the project study area, from I-85/40 to SR 1962 (Third Street Extension), lies within the Haw Creek watershed. From SR 1962 (Third Street Extension) north to US 70, the project study area drains into Back Creek via MoAdams Creek below the Graham-Mebane Reservoir. The middle section of the project study area from US 70 north to SR 1921 (Mebane Rogers Road) drains into the Graham-Mebane Reservoir. The northern most section of the project study area from SR 1921 (Mebane Rogers Road) to SR 1918 (Mrs. White Lane) drains into Mill Creek, a major tributary to Back Creek (Graham-Mebane Reservoir).

A total of 32 streams are located in the project study area. Of these, 30 are perennial (i.e., flowing most of the year) and 2 are intermittent (i.e., flowing only periodically throughout the year). These include 13 unnamed tributaries (UTs) to MoAdams Creek, MoAdams Creek, 3 UTs to Back Creek (Graham-Mebane Reservoir), 9 UTs to Mill Creek, Mill Creek, and 5 UTs to Haw Creek. Descriptions of the streams are listed in Table 3.17. Two ponds are also located in the project study area. Surface waters within the project study area are shown in Figure 3.8. No streams within the project study area are currently listed on the NCDWQ Clean Water Act (CWA) Section 303(d) list of impaired streams.

**Table 3.17**  
**Physical Characteristics of Streams**

Stream No. / Seasonality	Stream Name	NCDWQ Index	Average Wet Channel Width (feet)	Average Wet Channel Depth (inches)	Benthic (Bottom) Substrate Composition	NCDWQ Best Usage Classification*
UT1 Perennial	UT to MoAdams Creek	16-18-7	4-6	4-6	cobble, gravel, sand, silt, clay	C; NSW
UT2 Perennial	UT to MoAdams Creek	16-18-7	2-3	1-2	gravel, sand, silt, clay	C; NSW

Stream No. / Seasonality	Stream Name	NCDWQ Index	Average Wet Channel Width (feet)	Average Wet Channel Depth (inches)	Benthic (Bottom) Substrate Composition	NCDWQ Best Usage Classification*
UT3 Perennial	UT to MoAdams Creek	16-18-7	1.5-2	2-3	sand, silt, clay	C; NSW
UT4 Perennial	UT to MoAdams Creek	16-18-7	1-1.5	2-3	sand, silt, clay	C; NSW
Perennial	MoAdams Creek	16-18-7	10-12	18-30	gravel, sand, silt, clay	C; NSW
UT5 Perennial	UT to MoAdams Creek	16-18-7	1	1-2	sand, clay	C; NSW
UT6 Perennial	UT to MoAdams Creek	16-18-7	2-4	2-4	gravel, sand, clay	C; NSW
UT7 Perennial	UT to MoAdams Creek	16-18-7	5-6	3-4	gravel, sand, clay	C; NSW
UT7A Perennial	UT to UT7	16-18-7	1	1	gravel, sand, clay	C; NSW
UT8 Perennial	UT to MoAdams Creek	16-18-7	1-1.5	1	gravel, sand, clay	C; NSW
UT9 Perennial	UT to MoAdams Creek	16-18-7	1	1	gravel, sand, clay	C; NSW
UT10 Perennial	UT to Back Creek	16-18-(1.5)	2-4	3-6	bedrock, cobble, gravel, sand	WS-II; HQW, NSW
UT11 Perennial	UT to Back Creek	16-18-(1.5)	5-6	3-6	bedrock, cobble, gravel, sand	WS-II; HQW, NSW
UT12 Perennial	UT to Mill Creek	16-18-3-2-(2)	2-4	2-4	bedrock, cobble, gravel, sand, clay	WS-II; HQW, NSW, CA
UT13 Perennial	UT to Mill Creek	16-18-3-2-(2)	1-1.5	1	pipd, gravel, sand, clay	WS-II; HQW, NSW, CA
UT14 Perennial	UT to Mill Creek	16-18-3-2-(2)	6-10	4-6	boulder, cobble, gravel, sand, silt	WS-II; HQW, NSW, CA**
Perennial	Mill Creek	16-18-3-(1.5)	20-30	24-40	bedrock, boulder, cobble, gravel, sand	WS-II; HQW, NSW, CA**
UT15 Perennial	UT to Mill Creek	16-18-3-(1.5)	1-2	1	cobble, gravel, sand	WS-II; HQW, NSW
UT16 Perennial	UT to Mill Creek	16-18-3-(1.5)	3-6	3-4	bedrock, cobble, gravel, sand	WS-II; HQW, NSW
UT17 Perennial	UT to Mill Creek	16-18-3-(0.5)	1.5-3	3-4	sand, clay, silt	WS-II; HQW, NSW
UT18 Perennial	UT to Haw Creek	16-20-(1)	1-2	1-2	gravel, sand, silt	WS-V, NSW
UT19 Perennial	UT to Haw Creek	16-20-(1)	2-3	2-3	cobble, gravel, sand	WS-V, NSW
UT20 Perennial	UT to Haw Creek	16-20-(1)	3-4	3	cobble, gravel, sand	WS-V, NSW
UT21 Perennial	UT to Haw Creek	16-20-(1)	3-4	3	cobble, gravel, sand	WS-V, NSW
UT22 Perennial	UT to UT21	16-20-(1)	2-3	2	cobble, gravel, sand	WS-V, NSW

Stream No. / Seasonality	Stream Name	NCDWQ Index	Average Wet Channel Width (feet)	Average Wet Channel Depth (inches)	Benthic (Bottom) Substrate Composition	NCDWQ Best Usage Classification*
UT23 Perennial	UT to Back Creek	16-18-(6)	1-2	1	sand, clay, silt	C, NSW
UT24 Perennial	UT to MoAdams Creek	16-18-7	2-3	2	cobble, gravel, sand	C; NSW
UT25 Perennial	UT to MoAdams Creek	16-18-7	2-3	3-4	cobble, gravel, sand	C; NSW
UT26 Perennial	UT to MoAdams Creek	16-18-7	3-4	6	cobble, gravel, sand	C; NSW
UT27 Perennial	UT to UT14	16-18-3-2-(2)	3-4	4	cobble, gravel, sand	WS-II; HQW, NSW
UT28 *** Intermittent	UT to Mill Creek	16-18-3-(0.5)	1-4	0-6	bedrock, cobble, gravel, sand	WS-II; HQW, NSW
UT29 **** Intermittent	UT to UT28	16-18-3-(0.5)	2	0-6	cobble, gravel, sand	WS-II; HQW, NSW

Notes: \* Unnamed tributaries carry the same surface water classification as the water body to which they connect.  
 \*\* Upstream section (Alternative 10) is outside of Water Supply Watershed Critical Area (CA).  
 \*\*\* UT28 scored 27.5 using Version 3.1 of the DWQ Stream Identification Form (NCDENR, 2005)  
 \*\*\*\* UT29 scored 23.5 using Version 3.1 of the DWQ Stream Identification Form (NCDENR, 2005)

### 3.2.7.3 Water Quality

**Best Usage Classifications.** NCDWQ classifies stream segments according to their highest supportable use. Unless otherwise stated, unnamed tributaries with no designated best usage classification share the classification of their respective receiving waters.

Back Creek and its tributaries, including MoAdams Creek, below the Graham-Mebane Reservoir are classified as Class C Nutrient Sensitive Waters (C NSW) (NCDENR, 2000a). Class C water resources are used for aquatic life propagation and survival, fishing, wildlife, secondary recreation, and agriculture. The NSW supplemental classification is intended for waters needing additional nutrient management due to their being subject to excessive growth of microscopic or macroscopic vegetation. In general, management strategies for point and non-point source pollution control require control of nutrients (nitrogen and/or phosphorus usually) such that excessive growths of vegetation are reduced or prevented and there is no increase in nutrients over target levels.

From a point 0.6 miles downstream of NC 119 to the Graham-Mebane Reservoir on Back Creek, Mill Creek is classified as a Water Supply II NSW High Quality Waters Critical Area (WS-II NSW HQW CA) stream. A Critical Area (CA) is defined as land within 0.5 mile and draining to a river intake or within 0.5 mile and draining to the normal pool elevation of water supply reservoirs. The WS-II classification also carries a HQW designation. The HQW supplemental classification is intended to protect waters with quality higher than state water quality standards. Mill Creek upstream of the Critical Area is classified as a WS-II NSW HQW stream. No waters classified as Outstanding Resources Waters (ORW) or WS-I occur within one mile of the project study area.

Haw Creek and its tributaries within the project study area are classified as Water Supply V (WS-V) water bodies (NCDENR, 2006c). Class WS-V waters have no categorical restrictions on watershed

channel design techniques will be investigated and pursued in the area of the culvert for stabilization purposes. The standard sedimentation and erosion control measures for the installation of culverts will be followed and all measures to improve/maintain the condition/stability of UT14 will be utilized.

#### 4.2.6.3 Stream Impacts

The number and length of impacted perennial stream channels for the preliminary engineering design of each Detailed Study Alternative as of August 2006 are represented in Table 4.12. Anticipated surface water impacts were calculated based on the length of each stream within the estimated construction limits. Additional areas outside the project study area might be indirectly affected due to changes in water levels and siltation from construction activities; however, impacts to these areas were not calculated, nor are they anticipated to be substantial. No adjacent upstream or downstream flooding will occur solely as a result of this project. The *Natural Resources Technical Report* (Buck Engineering, 2003) and *Natural Resources Technical Report Addendum* (Baker Engineering, 2006b) include additional details about each stream.

Perennial streams are those meeting the criteria set forth by the North Carolina Division of Water Quality (NCDWQ). The perennial streams are considered to be significant, in that they possess the consistent hydrology to support aquatic populations. Important streams are classified based on guidance from the US Army Corps of Engineers (USACE). The USACE is responsible for making the final importance decision. Compensatory mitigation is required for important stream channel impacts greater than 150 linear feet.

**Table 4.12**  
**Estimated Stream Impacts**

Stream / Seasonality	Stream Name	Estimated Impact* (linear feet)		
		Alternative 8	Alternative 9	Alternative 10
UT1 / Perennial	UT to MoAdams Creek	149	149	149
UT3 / Perennial	UT to MoAdams Creek	187	187	187
UT4 / Perennial	UT to MoAdams Creek	132	132	132
Perennial	MoAdams Creek**	376	376	376
UT6 / Perennial	UT to MoAdams Creek	325	325	325
UT7 / Perennial	UT to MoAdams Creek	266	266	266
UT7A / Perennial	UT to UT7	22	22	22
UT8 / Perennial	UT to MoAdams Creek	195	195	195
UT10 / Perennial	UT to Back Creek	163	163	163
UT11 / Perennial	UT to Back Creek	323	323	323
UT12 / Perennial	UT to Mill Creek	274	0	0
UT13 / Perennial	UT to Mill Creek	35	0	0
UT14 / Perennial	UT to Mill Creek	283	196	344
Perennial	Mill Creek	188	263	436
UT15 / Perennial	UT to Mill Creek	0	0	140
UT16 / Perennial	UT to Mill Creek	194	293	302

Stream / Seasonality	Stream Name	Estimated Impact* (linear feet)		
		Alternative 8	Alternative 9	Alternative 10
UT17 / Perennial	UT to Mill Creek	204	216	215
UT24 / Perennial	UT to MoAdams Creek	80	80	80
UT25 / Perennial	UT to MoAdams Creek	155	155	155
UT28 / Intermittent	UT to Mill Creek	91	100	94
<b>TOTAL:</b>		<b>3,642</b>	<b>3,441</b>	<b>3,904</b>

Notes: \* Anticipated surface water impacts are based upon the construction limits of the most recent preliminary designs (August 2006). Surface waters not impacted by the proposed project are not included in the table.

\*\* Two crossings at MoAdams Creek (282 linear feet and 94 linear feet of impacts).

Linear stream impacts are greatest for Alternative 10 and least for Alternative 9. The differences in the length of impacts are attributed to the extra stream crossing encountered in Alternative 10 compared to Alternatives 8 and 9. Alternative 10 also crosses a substantially longer section of Mill Creek than Alternatives 8 and 9.

At this phase in the planning process, the need for stream relocations is not anticipated. Should such actions be required, as determined during final design, coordination with the US Fish and Wildlife Service (USFWS) and the NC Wildlife Resources Commission (NCWRC) would be completed in accordance with mandates expressed in the Fish and Wildlife Coordination Act (72 Stat. 563, as amended, 16 USC 661 et seq. [1976]).

Mitigation must be provided for cumulative important stream channel impacts exceeding 150 linear feet. Complete bridging of the stream channel would not require mitigation, but construction of standard culverts would require mitigation for the disturbed stream channel. The preliminary engineering designs currently propose a bridge over Mill Creek for Detailed Study Alternatives 8, 9, and 10 to accommodate flood passage. A conceptual mitigation plan would be developed during final design and included in the final environmental document.

#### 4.2.6.4 Floodplains and Floodways

Both Alamance County and the City of Mebane are participants in the National Flood Insurance Regular Program. Table 4.13 provides information regarding the area and length of the floodways and 100-year floodplains impacted by the proposed preliminary engineering designs within each Detailed Study Alternative. All of the Detailed Study Alternatives cross the 100-year floodplains of Mill Creek and MoAdams Creek, where detailed flood studies have been performed. Due to stream meanders and minor variations in stream width, Alternative 10 crosses a wider floodplain and floodway of Mill Creek than either of the other two Detailed Study Alternatives. However, NCDOT has recommended construction of a bridge for the crossing of Mill Creek for all three alternatives. Therefore, no substantial difference in impacts between the three alternatives is expected within the 100-year floodplains.



**Table 4.15**  
**Estimated Wetland Impacts**

Wetland	Impact* (acres)	Description	Type	NCDWQ Rating**
WL1***	0.105	Freshwater marsh	Riverine	38
WL2	0.002	Headwater forest	Riverine	43
WL3	0.008	Isolated vernal pool	Non-Riverine	18
WL4	0.021	Freshwater marsh	Riverine	64
WL5	0.045	Freshwater marsh	Riverine	29
WL6	0	Headwater forest	Riverine	50
WL7	0	Headwater forest	Riverine	55
WL8	0	Headwater forest	Riverine	51
WL9	0	Freshwater marsh	Riverine	54
WL10	0	Stormwater Pond	Non-Riverine	
WL11	0.049	Headwater forest	Riverine	44
WL12	0	Headwater forest	Riverine	62
WL13	0.019	Headwater forest	Riverine	45
<b>TOTAL:</b>	<b>0.249</b>			

Notes: \* Anticipated wetland impacts are based on the estimated construction limits of the most recent preliminary engineering designs (August 2006)

\*\* NCDENR, 1995

\*\*\* WL1 was re-delineated in June 2005 due to altered hydrology from beaver dam removal

In addition to the direct impacts within the right-of-way of the preliminary engineering designs, other adverse impacts to wetlands and aquatic sites associated with project construction could include direct or indirect hydrologic impacts resulting from the alteration of drainage patterns. The concentration of overland flow into pipes and the potential increases in stormwater runoff could lead to downstream channel incision and consequent wetland hydrology alterations. In addition to permanent alterations, temporary adverse impacts also may occur, such as temporary pond dewatering and stream diversion during the construction of bridges and culverts, and temporary clearing and filling associated with underground utility relocation and construction access.

#### 4.3.3.2 Mitigation Evaluation

Mitigation is defined in NEPA regulations (40 CFR Section 1508.20 and 40 CFR Part 230) as efforts that a) avoid, b) minimize, c) rectify, d) reduce or eliminate, or e) compensate for adverse impacts to the environment. Mitigation of wetland impacts is recommended in accordance with Clean Water Act (CWA) Section 404(b)(1) Guidelines (40 CFR Part 230), FHWA stepdown procedures (23 CFR Sections 777.1 et seq.), mitigation policy mandates articulated in the USACE/USEPA Memorandum of Agreement (MOA; Page and Wilcher 1990), Executive Order 11990 (42 FR 26961 [1977]), and US Fish and Wildlife Service mitigation policy directives (46 FR 7644-7663 [1981]).

Section 404(b)(1) Guidelines, the USACE/USEPA MOA, and Executive Order 11990 stress avoidance and minimization as primary considerations for protection of Waters of the United States.